L 37688-66

ACC NR: AP6025255   O

The effects of radiation noise on the emission from the GSI-1M laser were also
evaluated. The authors showed that the lifetime of the excited state of neodymium
ions decreased at high pump densities, resulting in corresponding elevation of the
threshold and a drop in the laser efficiency. Orig. art. has: 3 figures and 6
formulas.   [YK]

SUB CODE: 20/ SUBM DATE: 26Jun65/ ORIG REF: 004/ ATD PRESS: 5041

Card 4/4

L 42306-66   EWT(m)/T/EWP(t)/ETI   IJP(c)   JD

ACC NR: AP6015472   SOURCE CODE: UR/0181/66/008/005/1517/1521

AUTHOR: Mashkova, Ye. S.; Molchanov, V. A.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Ion-crystal scattering

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1517-1521

TOPIC TAGS: particle scatter, coulomb scatter, crystal optic property

ABSTRACT: In earlier articles, the authors showed that many mechanisms of ion-solid interface interactions allow a simple quantitative interpretation if the Coulomb-dependent predominant small-angle particle scattering interaction is taken into consideration. In this paper, the authors show that the application of the earlier derived concepts to the scattering of ions by single crystals makes it possible to explain some other mechanisms being observed. The authors present results of an investigation of the power spectra during the scattering of inert gas ions with energies of 25 − 30 kev by facets (100) and (114) of a copper crystal. The results obtained show that during the scattering of ions by crystals, under certain conditions in the

Card 1/2

L 42306-66

ACC NR: AP6015472

scattered beam, ions which have undergone two-fold scattering predominate. It is also noted that the extremely idealized model of the mechanism presents a quantitatively correct representation of the mechanisms observed. Yu. V. Martynenko performed some of the evaluations. Orig. art. has: 5 figures.

SUB CODE: 20/   SUBM DATE: 21Oct65/   ORIG REF: 010/   OTH REF: 007

Card 2/2

L 36318-66   BWT(l)/BWT(m)/T/EWP(t)/ETI   IJP(c)   JD

ACC NR: AP6015783 (A, N) SOURCE CODE: UR/0048/66/030/005/0854/0856

AUTHOR: Mashkova, Ye.S; Molchanov, V.A.   53
                                                                           50
ORG: Scientific Research Institute of Nuclear Physics, Moscow State University im. B
M.V.Lomonosov (Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudar-
stvennogo universiteta)

TITLE: Ion scattering by crystals /Report, Twelfth All-Union Conference on the
Physical Bases of Cathode Electronics held in Leningrad 22-26 October 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 854-856

TOPIC TAGS: ion scattering, multiple scattering, copper, neon argon, krypton, ion
energy

ABSTRACT: The energy spectra of initially monoenergetic Ne^+, Ar^+, and Kr^+ ions scatter-
ed in the (110) plane of a copper crystal from (100 and (114) faces have been recorded
in an investigation of multiple scattering of ions from crystals. The monoenergetic
ion beams were produced with the mass monochromator described elsewhere by V.A.
Molchanov and V.G.Tel'kovskiy (Vestn. Mosk. un-ta. Ser. fiz.-astron., No. 1, 22 (1961));
data are presented for scattering of 25 keV Kr^+ and 30 keV Ar^+ and Ne^+ ions. The ions
scattered through a predetermined angle from the converging monoenergetic beam (conver-
gence angle, $2°$) by the crystal face entered the 1 x 4 mm slit (located 16.5 cm from
the scattering crystal) of a 10 cm radius $180°$ electrostatic energy analyzer (energy

Card 1/2

L 36318-66

ACC NR: AP6015783

3

resolution, 1 %) and were recorded in a Faraday cup. The presented spectra, recorded at grazing angles from 10 to 17° and scattering angles from 27.5 to 50°, showed that the contribution of doubly scattered ions to the scattered beam increased with decreasing distance between the scattering atoms (i.e., in passing from the (114) to the (100) scattering faces) and with increasing atomic number of the scattered ion. Under some conditions doubly scattered ions predominated in the scattered beam. Calculations of Yu.V.Martynenko (Fiz. tverdogo tela, 6, 2003 (1964)) indicated that the probability of of double scattering should increase with increasing atomic number of the scattered ion and the scattering atom, and with decreasing energy, distance between scattering atoms, and scattering angle. The present measurements are in good agreement with these con- clusions. The authors thank L.A.Artsimovich for discussing the organization of the work and for assistance, and Yu.V.Martynenko and E.C.Parilis for discussions. Orig. art. has: 1 formula and 2 figures.

SUB CODE: 20/   SUBM DATE: 00/   ORIG REF: 003/   OTH REF: 002

Card 2/2

L 33115-66

ACC NR: AP6024083 SOURCE CODE: UR/0144/66/000/002/0235/0236

AUTHOR: Zav'yalov, A. S.; Get'man, A. A.; Molchanov, V. D.; Krasyuk, N. P.;
Agranovskiy, K. Yu.; Berger, A. Ya.; Greyer, L. R.; Isaakov, V. P.; Miller, Ye. V.;
Pyatman, K. I.; Abryutin, V. N.; Gubanov, V. V.; Oranskiy, M. I.; Yevseyev, M. Ye.;
Merkin, G. B.; Sinel'nikov, Ye. M.; Avilov-Karnaukhov, B. N.; Bogush, A. G.;
Bolyayev, I. P.; Pekker, I. I.; Chernyavskiy, F. I.

ORG: none

TITLE: O. B. Bron (on his 70th birthday)

SOURCE: IVUZ. Elektromekhanika, no. 2, 1966, 235-236

TOPIC TAGS: electric engineering personnel, circuit breaker

ABSTRACT: Osip Borisovich Bron was born in 1896 in Klintsi. In 1920, he graduated
from the physics-math faculty of Khar'kov Technological Institute. He became a pro-
fessor in 1930. He defended his doctor's thesis in 1940. During the second world
war, he was in the navy. After demobilization in 1950, Engineer Colonel Bron went to
work teaching at the Leningrad Industrial Correspondence School. He became the head
of the Chair of Theoretical Bases of Electrical Technology in 1958. He is closely
associated with scientific and development work, and has cooperated closely in this
area with the Leningrad "Elektrosila" plant since 1946. His work has been in the
areas of spark-damping and high-power circuit breakers. He has published over 140
scientific works and 19 inventions. [JPRS]

SUB CODE: 05, 09 / SUBM DATE: none

Card 1/1

MOLCHANOV, V.F.

Matrix elements of irreducible representations of a symmetric
group. Vest. Mosk. un. Ser. 1: Mat., mekh. 21 no.1:52-57
Ja-F '66.   (MIRA 19:1)

1. Kafedra teorii funktsiy i funktsional'nogo analiza Moskovskogo
gosudarstvennogo universiteta. Submitted May 8, 1964.

MOLCHANOV, V.F., inzh.

Obtaining combined coatings in chromium plating. Mashinostroenie no.4:78-80 Jl-Ag '64.   (MIRA 17:10)

MOLCHANOV, V.F.; KAKUYEVITSKIY, V.A., kand. tekhn. nauk
            retsenzent

    [Rapid chromizing] Skorostnoe khromirovanie. Kiev,
    Tekhnika, 1965.   249 p.   (MIRA 18:11)

MOLCHANOV, Vasiliy Fedorovich; VORONITSYN, I.S., kand. tekhn. nauk, dots., nauchnyy red.; BOGORAD, L.Ya., red.; KATSHEL'SON, N.Ye., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Rapid self-regulating chrome plating; characteristics of chrome plating, properties of deposits, and selection of efficient methods]Skorostnoe samoreguliruiushcheesia khromirovanie; osobennosti khromirovaniia, svoistva osadkov i vybor ratsional'nykh re-zhimov. Leningrad, 1962. 59 p.   (MIRA 15:12)
                    (Chromium plating)

MOLCHANOV, Viktor Grigor'yevich; LIVSHITS, Ya.L., red.; SAVCHENKO, Ye.V., tekhn.red.

[Ethiopia] Efiopiia. Moskva, Izd-vo "Znanie," 1960. 31 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.7, Mezhdunarodnaia, no.20).

(MIRA 13:10)

(Ethiopia)

MOLCHANOV, VASILIY IVANOVICH   DECEASED   1961/1

c 1960

SEE ILC

PEDIATRICS

MACHINSKAYA, I.V.; BARKHASH, V.A., MOLCHANOV, V.I.

Reactions of aldehydes and ketones with acetic anhydride. Part 3. Reaction of cyclopentanone, acetone, and methylpropylketone with acetic aldehyde. Zhur.ob.khim. 23 no.5:756-759 My '53.   (MLRA 6:5)
                                                (Ketones) (Acetic anhydride)

MOLCHANOV, V. I.

Reaction of aldehydes and ketones with acetic anhydride. III. Reaction with acetic anhydride of cyclopentanone, acetone, and methyl propyl ketone. I. V. Machinskaya, V. A. Barkhash, and V. I. Molchanov. J. Gen. Chem. U.S.

S.R., 23, 791-3 (1953)(Engl. translation).—See C.A. 48, 4451b.   H. L. H.

MOLCHANOV, V.I.

Unusual wear of core bits. Razved.i okh.nedr 21 no.2:52-53
Mr-Ap '55.   (MLRA 9:12)

(Boring machinery)

15-57-3-3853D

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 3,
                    p 194 (USSR)

AUTHOR: Molchanov, V. I.

TITLE: Some Problems in the Technology of Shot-Boring (Neko-
                toryye voprosy tekhnologii drobovogo bureniya)

ABSTRACT: Bibliographic entry on the author's dissertation for
                the degree of Candidate of Technical Sciences, presented
                to the Tomsk Polytechnic Institute (Tomskiy politekhn.
                in-t), Tomsk, 1956.

ASSOCIATION: Tomskiy politekhn. in-t (Tomsk Polytechnic Institute)

Card 1/1

14(5)   SOV/132-59-2-5/16
AUTHORS: Molchanov, V.I.; Matrosov, V.M.

TITLE: On the Choice of Initial Parameters for Vibration-Rotary
                Action Drilling Machines (K vyboru iskhodnykh parame-
                trov buril'nykh mashin vibratsionno-vrashchatel'nogo
                deystviya)

PERIODICAL: Razvedka i okhrana nedr, 1959, Nr 2, pp 25 - 30 (USSR)

ABSTRACT: The article describes the results of six years of re-
                search conducted by a group of scientists of the Ka-
                fedra tekhniki razvedki (Department of Prospecting
                Technology)of the Tomsk Polytechnical Institute, on
                the creation of highly productive drilling rigs and
                the improvements of existing drilling processes. It
                was found by empirical and graphical computations
                that: 1) the volume of rock crumbled by one percus-
                sion depends on the angle of percussion and reaches
                its maximum at the angle of the most advantageous ap-
                plication of force (P) which in addition to the angle
                of friction (φ); 2) the maximum efficiency of percus-
Card 1/2   sion-rotary and vibration-rotary drilling is obtained

SOV/132-59-2-5/16

On the Choice of Initial Parameters for Vibration-Rotary Action
Drilling Machines

at such correlation of oscillation frequency with the
rotation speed at which the direction of the percus-
sion coincides with the angle β ; 3) the experimentally
found values of the angle β permit the calculating of
axial speed of the drilling bit at the moment of per-
cussion at a given speed of the drill; 4) the rotary
speed of the drill and the calculated axial speed of
the bit are the initial parameters for the choice of
the optimal drilling regime and for the construction
of vibration-rotary drilling machines. The analytical
and graphic computations are described in detail. The
author mentions the following scientists who took part
in this research: I.S. Mityushkin; G.I. Tolstykh; G.A.
Kushnikov and V.I. Butov. There are 2 graphs and 1
set of graphs, 2 diagrams, 2 tables and 4 Soviet re-
ferences.

ASSOCIATION: (SNIIGGIMS)

Card 2/2

MOLCHANOV, V.I., kand.tekhn.nauk; LESHCHEV, D.A.; inzh.

Calcualtion of loss of pressure in standard and slim holes.
Trudy SNIIGGIMS no.10:85-108 '60.   (MIRA 15:12)
                              (Boring)

LESHCHEV, D.A.; MOLCHANOV, V.I.

Cement carrier with dumping bottom. Trudy SNIIGGIMS no.10:169-170 '60.
(MIRA 15:12)

(Oil well cementing--Equipment and supplies)

LESHCHEV, D.A.; MOLCHANOV, V.I.

        Comparative analysis of the designs of subsurface samplers. Trudy
        SNIIGGIMS no.14:175-187 '61.   (MIRA 15:8)
              (Core drilling—Equipment and supplies)

MOLCHANOV, V.I.

Theory of parabolic jet bits for drilling soft rocks. Trudy
SNIIGGIMS no.18:192-205 '61. (MIRA 16:7)
(West Siberian Plain--Boring machinery)

MOLCHANOV, V.I.

Methods for determining the angles of optic axes by indirect
means using the Fedorov universal stage. Zap. Vses. min. ob-va
93 no.1:60-64 '64   (MIRA 18:2)

1. Sibirskiy nauchno-issledovatel'skiy institut geologii, geo-
fiziki i mineral'nogo syr'ya, Novosibirsk.

MOLCHANOV, V.I.

Ivan Fedorovich Ogarkov, 1895-; on his 70th birthday. Sud.-med. ekspert. 8 no.1:61-62 Ja-Mr '65. (MIRA 18:5)

AMSHINSKIY, N.N.; MARIICH, I.V.; MOLCHANOV, V.I.; ORLOVA, L.I.;
    GORB, A.M.; KUZNETSOV, Yu.A., nauchn. red.; SMORCHKOV,
    I.Ye., nauchn. red.; KRYZHANOVSKIY, V.A., ved.red.

[Accessories of the granitoids of the Altai and methods
for studying them] Aktsessorii granitoidov Altaia i me-
todika ikh izucheniia. Moskva, Nedra, 1964.   175 p.
                                        (MIRA 17:10)
1. Chlen-korrespondent AN SSSR (for Kuznetsov).

ZAPOROZHETS, B.I., inzh.; MOLCHANOV, V.K., inzh.

    Preventive maintenance of 110 kv. transformer entrances without
    dismantling them. Energ. i elektrotekh. prom. no.3:67 Jl-S '64.

                                              (MIRA 17:11)

1. MOLCHANOV, V.L.

2. USSR (600)

4. Viticulture - Uzbekistan

7. Leaving vinegyards uncovered during the winter in Uzbekistan. Sad i of. no.10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

MOLCHANOV, V. L.

        "The Disposition and Main Developmental Conditions of Nonirrigated
Viticulture in Southern Uzbekistan."   Cand Agr Sci, All-Union Sci-Res Inst of
Viniculture and Viticulture, Tashkent, 1953. (RZhBiol, No 7, Dec 54)

        Survey of Scientific and Technical Dissertations Defended at USSR
Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

L 45446-65   EWT(d)/EWT(1)/EPF(c)/EPF(n)-2/EWG(m)/EPR   Pr-4/Pu-4   IJP(o)
ACCESSION NR: AP5007049   S/0120/65/000/001/0164/0165   WW 33

AUTHOR: Molchanov, V. M.

TITLE: Application of an optical method to measuring temperature difference

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1965, 164-165

TOPIC TAGS: temperature measurement, optical interferometer

ABSTRACT: A method of measuring temperature difference by an optical
interferometer is described. The method is based on this relation: $t = f(n)$,
where t is the temperature and n is the refraction index; the latter depends on
the optical density of a medium which, in turn, depends on its temperature. A
monochromator (Hg - 579 $\pm$ 10 mμ) is placed between the light source and the first
objective of an ITR-1 Soviet-made interferometer. With 10-cm long troughs
(cells), the error in the refractive index of distilled water was 2×10^{-7}, for the
interval $n - n_0 = 0.0005$ and $\Delta n/n = 10^{-5}$ %. The instrument's shortcomings are:

Card 1/2

L 45446-65
ACCESSION NR: AP5007049

narrow range of temperature, inapplicability to colored and opaque liquids; also,
difficulties of operation with gas cells. Orig. art. has: 2 figures and 2 formulas.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk
Metallurgical Institute)

SUBMITTED: 07Apr64   ENCL: 00   SUB CODE: TD, OP

NO REF SOV: 001   OTHER: 001

Card 2/2

MOLCHANOV, Y.N.; SHMIDT, M.S.

Measures for economizing on electric power used by the hoisting apparatus of the mines of the "Moskvougol'" combine. Prom. energ. 12 no.7:22 Jl '57.   (MIRA 10:8)

(Electric power)

BOGUTSKIY, S.S., inzh.; MOLCHANOV, V.N., inzh.

Sparkproof instrument for measuring current and voltage in mines.
Bezop.truda v prom. 5 no.1:20-21 Ja '61.   (MIRA 14:2)

1. Kuznetskiy nauchno-issledovatel'skiy ugol'nyy institut.
(Electric meters)

BOGUTSKIY, S.S.; ZAKHVATKINA, B.I.; KIL'MAN, A.Sh.; KISLOV, A.N.;
    KOZLOVSKIY, P.R.; MOLCHANOV, V.N.; TARASEVICH, L.I.; BAKKAL,
    R.A., otv. red.; BELOV, V.S., red. izd-va; OVSEYENKO, V.G.,
    tekhn. red.

[Automatically controlled mining systems]Rudnichnye avtomati-
cheskie ustanovki; prakticheskoe posobie po avtomatizatsii na
shakhte. Moskva, Gosgortekhizdat, 1962. 195 p.
                                              (MIRA 15:12)

    (Mining machinery)   (Automatic control)

BOGDANOV, Yu.V., inzh.; MOLCHANOV, V.N., inzh.

Program control of cutter loaders having a selective actuating mechanism. Sbor. KuzNIUI no.10:182-201 '64. (MIRA 18:9)

L 8333-66   EEC(k)-2/EWA(h)/EWT(l)

ACC NR: AP5025763

SOURCE CODE: UR/0286/65/000/018/0130/013?

AUTHORS: Bogdanov, Yu. V.; Kislova, V. F.; Molchanov, V. N.; Abramtsev, Ye. P.; Shishorin, V. A.; Popov, P. I.; Nikiforov, A. F.

ORG: none

TITLE: A discrete contactless phase-sensitive pickup. Class 74, No. 174962 /announced by Kuznetsk Scientific Research Coal Institute (Kuznetskiy nauchno-issledovatel'skiy ugol'nyy institut)_7

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 130-131

TOPIC TAGS: phase meter, magnetic circuit, magnet

ABSTRACT: This Author Certificate presents a discrete contactless phase-sensitive pickup consisting of a fixed toothed magnetic circuit with control windings and a moving magnetic circuit without windings. In order to simplify the pickup and to obtain an unambiguous signal pickup, two readout windings are situated on two external teeth of the fixed magnetic circuit (see Fig. 1). The moving magnetic circuit, which is connected to the moving object, is equipped with one readout tooth.
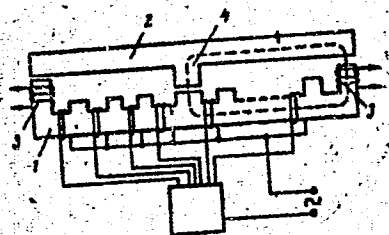
Card 1/2

UDC: 621.083.8:62--503.83

L 8333-66
ACC NR: AP5025763

Fig. 1. 1 - Fixed toothed magnetic circuit;
2 - moving magnetic circuit;
3 - readout windings;
4 - readout tooth.

Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 07Jul64

jw

Card 2/2

MOLCHANOV, V.P.

USSR/Forestry - General Problems.   K-1

Abs Jour   : Ref Zhur - Biol., No 5, 1958, 20103

Author   : Molchanov, V.P.
Inst   : —
Title   : Top Fire Spreading Conditions in Pine Woods.

Orig pub   : Lean. kh-vo, 1957, No 8, 50-53.

Abstract   : The origin and spread of top fires is considered from the
              point of view of physics and a classification is made of
              the causative factors involved in this process. A heat
              distribution scheme is presented for the forty year old
              lichen and moss pine wood and the thermal dynamics are
              characterized.

Card 1/1

The Kind of Instruction Needed for Fire Protection of Forests by Aviation (cont.)   84-9-34/47

the new instruction did not establish any detailed basis for co-operation between the air and ground patrols. The question of setting up airfields is equally obscure. The article urges that at least two parachutists be sent to the fire area and not one, as stated in the instruction; and also that the age group for parachute jumps be restricted. The instruction issued by the USSR Ministry of Agriculture contradicts another existing document on the subject issued by the Main Administration of   . Civil Air at the USSR Council of Ministers. For instance, the norm for the cruising speed of the Mi-4 is incorrect (in the new instruction) and so are several other data, like the size of platform for parachute landing, data on jumps over a forest, etc. The article also criticizes the style and terminology used in the new instruction and accuses the editors of ambiguities. A photo accom-panies this article, showing a forest fire. It was made by Yu. Barmin. The caption reads: an An-2 brought parachutists to the place on fire.

AVAILABLE: Library of Congress

Card 2/2

USSR / Forestry. Biology and Typology of the Forest.   K-1

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24851.

Author : Molchanov, V. P.
Inst   : Not given
Title   : The Change of Humidity of the Needles of the Pinus
          Silvestris L. in Connection with Tree Top Fires.

Orig Pub: Botan. zh., 1957, 42, No 2, 294-296.

Abstract: A study was made in young and fully-grown pine for-
          ests on the Karelian isthmus. An identical humid-
          ity of the needles in various parts of the crown
          is registered. Graphs are given of changes of humid-
          ity of the needles by age. It is pointed out that
          young needles have the most moisture, while the
          old ones are the driest. A sharp drop in the humid-
          ity of needles of all ages is registered in the
          springtime, which is explained by the approach of

Card 1/2

8

SOV/84-58-4-28/48

AUTHORS: Kurbatskiy, N., Molchanov, V., Bitkov, P. (Leningrad)

TITLE: Laying Fire Barrier Strips by Helicopters (Prokladka
                protivopozharnykh zagraditel'nykh polos s vertoletov)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 4, pp 31-32 (USSR)

ABSTRACT: The authors give first a historical sketch of attempts to lay
                fire barrier strips from aircraft in which they refer to USA
                experience. Since 1955, joint experimentation by the Central
                Scientific Research Institute of Forestry (TsNIILKh-Tsentral'nyy
                nauchno-issledovatel'skiy institut lesnogo khozyaystva), the
                State Scientific Research Institute (GosNII) of the GVF, and the
                Central Aviation Base for Forest Protection has been carried on.
                The article discusses various methods that have been tried and
                the results achieved. Limited success was due to the lack of
                an efficient spraying device, such as a proper pump. The PS-8
                pump used thus far is considered too heavy (180 kg). A photo-
                graph and a diagram accompany the text.
                1. Forest fires--Control systems   2. Helicopters--Performance
Card 1/1   3. Firefighting vehicles--Equipment

RUDAKOV, A.; VASIL'YEV, G.; BRONER, R.; MOLCHANOV, V.

  Proposals made by engineers. Pozh.delo 8 no.12:25 D '62.
                                          (MIRA 16:1)
        (Fire prevention—Technological innovations)

S/264/63/000/003/003/004
A052/A126

AUTHOR: Molchanov, V.

TITLE: Helicopter on fire-fighting duty

PERIODICAL: Referativnyy zhurnal, Vozdushnyy transport, no. 3, 1963, 29,
               abstract 3A221 (Pozharn. delo, no. 9, 1962, 22)

TEXT: The use of easily removable equipment in the fire extinguish-
ing from helicopters is described. The equipment consists of an M-800
(M-800) pump, two connecting tanks of 1,000 l total capacity and a special
barrel with liquid damper and a set of nozzle-sprayers. The pump is con-
nected to the barrel by means of a rubberized hose. In the main leading
from the pump to the barrel there is an appliance for supplying to the
extinguishing-liquid jet a concentrated solution of a surface-active
substance sul'fanol HП-1 (NP-1 sulphanol). The extinguisher tanks are
made in the form of seats to accommodate 8 firemen. The equipment weigh-
ing 175 kg can be mounted in 20 min by two men on any serial MИ-4 (MI-4)
helicopter. For filling the tanks with water from forest wells (on

Card 1/2

Helicopter on fire-fighting duty

S/264/63/000/003/003/004
A052/A126

landing the firemen with light fire-fighting equipment in the locality of the fire a small-size M-250 (M-250) pump is used. It is established that no extinguishing of a wavy fire edge from a helicopter is possible. Restrictive fire-protecting strips drawn from a helicopter 5 - 10 m before the fire edge are effective. A water jet about 30 m long breaks through the air flow caused by the helicopter blades and through the plantation layer. Passing through the plantation the jet atomizes and falls to the ground in the form of a heavy rain. At the same time the fire on the fire edge is blown up too, but the flame and sparks are driven in the direction of the burned-out area. After the helicopter has passed, the fire edge stops as a rule as soon as it reaches the restrictive strip. Sporadic break-outs of fire are extinguished by ground brigades. Flying 5 - 10 m over tree tops at a cruising speed of 15 km/h, a helicopter having 600 - - 700 l in water tanks and ejecting 8 - 10 l/sec can drive restrictive fire-protecting strips 150 - 300 m long and 3 - 4 m wide.

A. Novobytov

[Abstracter's note: Complete translation]
Card 2/2

Decomposition potentials of molten potassium and sodium fluorides. V. S. Mokhanov. *Legkie Metal.* 4, No. 5, 28-31 (1935). By use of a special graphite cell the decompn. potential of KF and NaF was detd. by breaks in the current-potential curve. Results: KF, 800°, 2.13 v.; 840°, 2.00 v.; 880°, 1.70 v.; NaF, 860°, 2.05 v.; 920°, 2.80 v.; 960°, 2.61 v. and 1022°, 2.45 v.
H. W. Rathmann

Decomposition potentials of aluminum oxide in fused fluorides. I. P. Tverdovskii and V. S. Molchanov. J. Applied Chem. (U.S.S.R.) 16, 1011-1016 (in German 1016)(1942). The decompn. potentials of cryolite at 1000°, 1035° and 1100° are, resp., 1.08, 1.80 and 1.55 v., for the mixt. NaF (x) + AlF$_3$ 10%, (mod.), 2.10 v. at 1000°; for NaF 51.5 + AlF$_3$ 48.5%, there are 2 points of inflection, 1.44 (for 1000°) and 2.70 v. (at 885°); for the mixt. Na$_3$AlF$_6$ plus 10% (by wt.) Al$_2$O$_3$, 1.37 and 1.45 v. at 935° and 1000°, resp., and for 20% Al$_2$O$_3$, 1.50 and 1.55 v., resp. The results showed a rectilinear relation with the temp.; thus the electrolysis is a homogeneous process in almost all electrolytes under investigation. The depolarizing action of Al$_2$O$_3$ on F at the anode caused an accumulation of AlF$_3$, and the O liberated at the anode formed CO$_2$. Data are tabulated and plotted. Twenty-nine references.   A. A. Pokgany

PROCESSES AND PROPERTIES INDEX

Conductometric method of determining chemical stability of glasses. G. G. Samartsev and V. S. Molchanov, Optiko-Mekhan. Prom. 9, No. 8, 7 (1939). The conductometric method developed by Kohlrausch (Wied. Ann. 44, 577 (1891)) was somewhat modified and used in the present expts. with good results. Distd. water and a 0.01 N HCl soln. were used for the expts. The general conclusion is that the quantity of acid, neutralized by glass at a given time, increases with increased content of metallic oxides in the glass and with decreased silica content. It is important to note that acids destroy glass to a greater depth than water. Difficultly sol. metallic oxides, besides SiO2, increase the protection of glass in water, but when in an acid soln., these oxides are dissolved and the protective layer is composed of colloidal silica. For a practical characterization of the chem. stability of glass it is important to det. not only the depth of destruction for a given moment of time but also the rate of increase of this depth.   M. V. Condoide

458-56A   METALLURGICAL LITERATURE CLASSIFICATION

Electrokinetic study of surface layers on glasses. V. S. Malchenov. J. Phys. Chem. (U. S. S. R.) 13, 1124-30 (1939).—Data are given on the ζ-potentials of quartz powders, various glasses and PbSO₄ in KCl, K₂SO₄, K₂CrO₄, Pb(NO₃)₂, HNO₃ and KOH solns. The results confirm the theory of the formation of protective layers on silicate glasses. A 67:33 PbO:SiO₂ glass is not (typically heteropolar but rather of a quartz-surface type. Because of the protective films formed the ζ-potentials of various app. glasses should be practically alike.   F. H. R.

Leningrad State Optical Inst.

Chemical stability of glass in relation to its thermal his-
tory. V. S. Molchanov. Optiko-Mekhan. Prom. 10,
No. 6-7. 7-8(1940).
M. V. Condoide

CA

19

Application of the Kohlrausch method for the determina-
tion of stability of glass. V. S. Molchanov. *J. Applied*
Chem. (U. S. S. R.) 13, 031-41 (in French, 941) (1940).—
By the method of C. A. 34, 3034⁷, the stability in aq. soln.
of KCl was the Jena glass > chem. glass, window glass >
molybdenum glass > electrode glass > metasilicate glass.
The method is recommended for the detn. of chem. sta-
bility of glass, especially of glass contg. no metals that
form hydroxides in water. It was proposed to express the
stability of glass by a relative value "time of equal destruc-
tion" or by the diagram "degree of destruction vs. time."
A. A. Podgornyi

METALLURGICAL LITERATURE CLASSIFICATION

CA

19

1ST AND 2ND ORDERS   **3RD AND 4TH ORDERS**

PROCESSES AND PROPERTIES INDEX

Chemical stability of Russian optical glasses. V. S.
Molchanov, Optiko Mekhan. Prom. 1941, No. 2, 3-7;
cf. C. A. 35, 1051.³—A series of optical glasses manufd.
in Russia were tested with regard to their water and acid
stability. The results of tests are tabulated. M. V. C.

A.I.S.-S.L.A.   METALLURGICAL LITERATURE CLASSIFICATION

A new case of conservation. N. E. Prikhil'ko and V. S. Mukhanov. Kolloid. Zhur. 13, 404-3 (1951). When at least 0.8 equivs. NH_4OH (in 25-30% soln.) or 16 equivs. KOH or 15 equivs. Me_2CO are added to $Na_2O.SiO_2$ soln., first an emulsion and then two layers form. In 11.3% Na_2SiO_3 soln., the bottom layer contained, e.g., 49% solid residue (17% Na_2O and 32% SiO_2), and the top liquid had 5.1% solids (4.2% Na_2O and 1.1% HCl). Thus, such accumulated in the viscous bottom layer. The alkalis layering of $Na_2O.SiO_2$ solns., at least 20 equivs. NH_4OH must be added, and no layering occurs when the ratio r of SiO_2:Na_2O is 2 or greater. If the bottom layer was treated again with NH_4OH, r in it increased further, e.g., from 1.8 to 1.8. The layer formation is due to dehydration of colloidal HCl by NH_4OH, etc.

1 Sep 52

MOLCHANOV, V. S.

USSR/Chemistry - Silicon Compounds, Copper and Nickel Compounds

"Diamine Complexes of Copper and Nickel Silicates," N.Ye. Prikhid'ko, O. S. Molchanova, V. S. Molchanov, Inst of Silicate Chem, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 86, No 1, pp 83-86

Three new complex compds contg silicic acid and related to the diamines of heavy metals were discovered. They are 2 ethylene diamino and one propylene diamino silicates of copper and nickel. Presented by Acad P. V. Grebenshchikov 28 Jun 52.

PA 234T15

MOLCHANOV, V. S.

Perc ③

Chem Abs
V. 48, 1-10-5

Il'ya Vasil'evich Grebenshchikov, O. S. Molchanova,
V. ___ _____, and V. ___ Molchanov. Zhur. Fiz.
Khim. 27, 777-9(1953).—An obituary of G. (1887-1953),
who was director of the Silicate Inst. in Leningrad.
J. J. Bikerman

6/15/54 M

MOLCHANOV, V.S

OThel, S.S.

Distr: 4B2c

Corrosion of silicate glasses by alkaline solutions. I. Destruction of quartz, quartz glass, and several equipment glasses by solutions of sodium hydroxide and sodium carbonate. V. S. Molchanov and N. E. Prikhid'ko. Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1957, 1151-7.— Conditions are selected for detg. the depth of destruction of silicate glasses by alk. solns. by using an interference microscope. The depth of the destruction is proportional to the time of action and the consn. of the alkali. An increase in temp. increases the depth of the destruction exponentially. The stability of 16 technical glasses toward the action of alkali was studied. It was found that quartz glasses and glasses rich in Zr were the most stable. Cryst. quartz was attacked only 0.1 as deeply as was quartz glass. J. Rovtar Leach

MOLCHANOV, V.S. (Leningrad); SIL'CHENKO, T.N., [deceased] (Leningrad).

A case of glass solarization. Priroda 46 no.1:114-115 Ja '57.
(MLRA 10:2)
(Ultraviolet rays)
(Glass painting and staining)

MOLCHANOV, V. S.

3(8)   p 3   PHASE I BOOK EXPLOITATION   SOV/1310

Soveshchaniye po eksperimental'noy i tekhnicheskoy mineralogii i
    petrografii, 5th Leningrad, 1956.

Trudy... (Transactions of the Fifth Conference on Experimental and
    Applied Mineralogy and Petrography) Moscow, Izd-vo AN SSSR, 1958.
    516 p. 1,800 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut geologii rudnykh
    mestorozhdeniy, petrografii, mineralogii i geokhimii, and Akademiya
    nauk SSSR. Institut khimii silikatov.

Resp. Ed.: Tsvetkov, A.I.; Ed. of Publishing House: Ivanov, B.V.;
    Tech. Ed.: Kiseleva, A.A.

PURPOSE: This book is intended for scientists and students of minera-
    logy and petrography.

COVERAGE: The present collection of articles are reprints of reports
    presented at the Fifth Conference on Experimental and Applied Minera-
    logy and Petrography, held in Leningrad on March 26-31, 1956. The

Card 1/11
        3

Transactions of the Fifth Conference (Cont.)   SOV/1310

Card 3/11

AUTHORS: Molchanov, V. S., Prikhid'ko, N. Ye.   62-1-1/29

TITLE: The Corrosion of Silicate Glasses by Alkaline Solvents
            (Korroziya silikatnykh stekol shchelochnymi rastvorami).
            Report 2: The Dependence of the Structure of the Glasses and
            Their Power of Resistance to Alkaline Influence (Soobshcheniye
            2. Zavisimost' mezhdu sostavom stekol i ikh ustoychivost'yu
            k deystviyu shchelochey)

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1958, Nr 1,
            pp. 3-7 (USSR)

ABSTRACT: Any silicate material is to a caertain degree subjected to the
            destructive influence of alkaline solutions. Various elements,
            if combined with silicates, make possible the unchangeable
            maintainance of their power of resistance. Only in the case of
            a considerable concentration of the added element the power of
            resistance is again reduced. Crystalline quartz has the great-
            est power of resistance. Among other was found that zirconium-
            -containing quartz glasses have an extremely great power of
            resistance. Nothing definite, however, can be said about bery-
            llium. A series of elements combined with silicates increase
Card 1/3   the power of resistance, however, not to such an extent as
            does zirconium. It was of special interest to detect whether

62-1-1/29

The Corrosion of Silicate Glasses by Alkaline Solvents
Report 2: The Dependence of the Structure of the Glasses and
Their Power of Resistance to Alkaline Influence

a substitution of silicium is also possible by various
elements without a considerable reduction of the power of
resistance against the alkaline influence. By means of the
interferrometric method the thickness of the dissolved layer
of glass was detected and thus the power of resistance of the
silicate glasses of the type $(87-x)\%$ against the influence of
alkaline solvents, as well as the power of resistance of the
double-sodium-silicate glasses which contain from 13 to 33,3
molecules $\%$ Na_2O (also titanium-containing flint) were de-
termined. Furthermore it was shown that -except beryllium -
all metals introduced to the double sodium silicate glass in-
stead of silicium reduce the power of resistance of the glasses
against alkaline influence. In the beginning (up to 22 $\%$ RO)
the reduction of the power of resistance is only unimportant,
but in the case of a quantitatively increased substitution (by
metal) a considerable decrease of this power of resistance
can be observed. The radius of the ion of the respective metal
which was introduced plays an important rôle here: the greater
the radius, the smaller is the power of resistance. Ther are
3 tables and 16 references, 10 of which are Slavic.

Card 2/3

62-1-1/29

The Corrosion of Silicate Glasses by Alkaline Solvents
Report 2: The Dependence of the Structure of the Glasses and
Their Power of Resistance to Alkaline Influence

ASSOCIATION: Institute of Silicate Chemistry AS USSR
               (Institut khimii silikatov Akademii nauk SSSR)

SUBMITTED: October 30, 1956

AVAILABLE: Library of Congress

               1. Glass-Corrosion-Test results   2. Alkaline solvents-
                  Corrosive effects-Test results

Card 3/3

AUTHORS: Molchanov, V. S., Prikhod'ko, N. Ye.   SOV/62-58-7-1/26

TITLE: The Corrosion of Silicate Glasses Caused by Alkaline Solutions
              (Korroziya silikatnykh stekol shchelochnymi rastvorami)
              Communication 3: Inhibitors of the Alkaline Corrosion of Glasses
              (Soobshcheniye 3. Ingibitory shchelochnoy korrozii stekol)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk,
              1958, Nr 7, pp 801 - 808 (USSR)

ABSTRACT: It is known that the destruction of silicate glasses by neutral
              and especially by acid solutions is from the first moment
              accompanied by a peculiar self-protection: The formation of a
              thin surface layer (or film) consisting of the products of de-
              composition of the glass. Berger (Ref 4) was the first to
              describe this phenomenon. Lateron Geffken (Ref 5) et al. dealt
              in detail with this problem. The purpose of this paper is the
              further investigation of this phenomenon in order to make
              practical use of it. The authors found that some anions have to
              a high degree the property of reducing the destructive effect
              of alkaline solutions on silicate glasses in which they are
Card 1/2   found in small concentration (0.01 g-ekv/l). Beryllate, alu-

The Corrosion of Silicate Glasses Caused by Alkaline   SOV/62-58-7-1/26
Solutions. Communication 3: Inhibitors of the Alkaline Corrosion of Glasses

minate and zincate ions exhibit an especially strong efficiency. The capability of inhibiting of these anions becomes especially clear in the destructions of all silicate glasses in alkali with the exception of the highly self-decomposing binary sodium and potash glasses. The results obtained by the experiments agree with the assumptions made by Berger and Geffken (on the mechanism of the inhibiting effect of anions). This inhibiting effect is not caused by the formation of a layer but by the action of the inhibitor on the elementary processes of which the corrosion consists. There are 4 figures, 2 tables, and 16 references, 8 of which are Soviet.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry AS USSR)

SUBMITTED: April 24, 1957

Card 2/2

AUTHORS: Molchanov, V. S., Prikhid'ko, N. Ye.   SOV/62-58-8-1/22

TITLE: The Corrosion of Silicate Glasses by Alkaline Solutions
(Korroziya silikatnykh stekol shchelochnymi rastvorami)
Note 4: The Destruction of Glasses by Means of Various Hydroxide
Solutions (Soobshcheniye 4. Razrusheniye stekol rastvorami
razlichnykh gidrookisey)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk,
1958, Nr 8, pp. 917-922 (USSR)

ABSTRACT: The characteristic feature of the action of alkaline solutions
on various silicon materials is caused by the destruction pro-
cess through the ions of the silicon hydroxyl and of the poly-
meric silicon—oxygen radicals. It is assumed that the action
of alkaline solution on glass changes according to the chemical
activity of the solution. This activity is again dependent on
the degree of electrolytic dissociation of hydroxide. After
further explanations of the chemical activity of various hy-
droxides in the reactions in which hydroxyl ions are taking
part, the authors discuss the publications in this field (Refs
5,6). In investigating the hydroxides the authors obtained the
following results: The hydroxides are distributed according

Card 1/3

SOV/62-58-8-1/22

The Corrosion of Silicate Glasses by Alkaline Solutions. Note 4: The
Destruction of Glasses by Means of Various Hydroxide Solutions

to a certain order (in dependence on their strength):
$KOH > LiOH > NH_4OH > Ba(OH)_2 > Sr(OH)_2 > Ca(OH)_2$. Caustic soda
destroys the silicate glasses (of any structure) to a higher
degree than the rest of the hydroxides. The authors call this
process a "sodium anomaly". It is assumed that the latter is
caused by the characteristic feature of the peptization of
silicic acid (by hydroxyl ions in the presence of sodium ions).
The action of hot water ($90^\circ C$) on silicate glasses of low
resistance proved to be of a rather dissolving than just of a
leaching out character. The calcium hydroxide solutions destroy
the silicate glasses in most cases not to such a high degree as
water, since on the surface calcium silicates are formed which
have a greater resistance to alkaline influence.
There are 1 figure, 4 tables, and 13 references, 7 of which are
Soviet.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of
Card 2/3   Silicate Chemistry, AS USSR)

SOV/62-58-8-1/22

The Corrosion of Silicate Glasses by Alkaline Solutions. Note 4: The
Destruction of Glasses by Means of Various Hydroxide Solutions

SUBMITTED: February 27, 1957

Card 3/3

MOLCHANOV, V.S.; OZERETSKOVSKAYA, N.G.

Alkali resistance of glass and cleaning of optical parts by alkaline solutions. Opt.-mekh. prom. 25 no. 2:48-51 F '58. (MIRA 11:7)

(Glass optical)
(Alkalies)

YASTREBOVA, L.S.; MOLCHANOV, V.S.

Effect of various factors on the structure of surface films of
silicate glass. Zhur.prikl.khim. 31 no.11:1628-1636 N '58.
(MIRA 12:2)

(Glass)   (Films (Chemistry))

SOV-26-58-11-17/49

AUTHORS: Makarova, T.M., Molchanov, V.S. (Leningrad)

TITLE: The Spontaneous Motion of Drops Over Solid Surfaces (Samo-
             proizvol'noye dvizheniye kapel' po tverdym poverkhnostyam)

PERIODICAL: Priroda, 1958, Nr 11, pp 87 - 88 (USSR)

ABSTRACT: The spontaneous motion of drops over solid surfaces is ex-
             plained by the phenomenon of a selective adsorption of octa-
             decyl spirit and stearic acid with oriented films on steel
             and glass. The phenomenon proceeds with such an intensity
             that the very thinnest film carries along a very large drop
             of oil. The motion comes to a stop as soon as the entire
             surface of the body is covered by the film. For demonstra-
             tion purposes, the easily obtainable motion effect of vase-
             line oil with an addition of octadecyl spirit is recommended.
             The dependence of the spontaneous motion on the size of the
             solid surface still remains unexplained. There is 1 set of
             photos and 7 references, 1 of which is American, 2 British,
             1 French and 3 Soviet.

             1. Drops--Motion   2. Thin films--Surface properties

Card 1/1

Molchanov, U.S.

15(2)
AUTHOR: None Given SOV/72-59-5-1/23

TITLE: Glass Science at the VIII Mendeleyev Congress
~~(Nauka o stekle na VIII Mendeleyevskom s"yezde)~~ (Mov, 59)

PERIODICAL: Steklo i keramika, 1959, Nr 5, pp 1-4 (USSR)

ABSTRACT: In the beginning a proclamation of the TsK KPSS to the personnel of the building material industries for a qualitative and quantitative increase of production is mentioned. The Congress took place in Moscow in the second half of March of the current year and was devoted to the 125th anniversary of the great scholar's birthday. Outstanding chemists of the Soviet Union and the People's Democracies attended the Congress. The principal problems of the development of chemistry were discussed at the plenary meetings and the meetings of the 18 Congress sections. Professor I. I. Kitaygorodskiy opened the meetings of the sub-section for glass and gave a survey of the stages of development of Soviet glass production as well as of a number of promising tasks in the field of glass technology. Moreover, the following lectures were held: Doctor Korani (People's Republic of Hungary) investigated the structure of the top-layers of glass;

Card 1/4

A. I. Avgustinnik (LTI imeni Lensovet) discussed the formation of a finely disperse crystalline phase from the glass-like phase; V. V. Vargin and G. O. Karapetyan (GOI) reported on absorption spectra, luminescence, and photochemical properties of cerium-glass types; A. G. Vlasov (GOI) reported on the quantitative reciprocal relations between ordered and disordered glass phases; Ye. A. Poray-Koshits, Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry of the AS USSR) discussed the reasons for the disagreement on the problem of the structure of glass-like substances; Professor O. K. Botvinkin, N. I. Ananich, and M. L. Mironova, Institut stekla (Glass Institute) reported on the Investigation of the Glass Structure by the Method of Thermal Analysis and Optical Polarization; Ye. V. Podushko (GOI) discussed the new method of electric glass melting and the melting of silicates by means of high-frequency current; Yu. G. Shteynberg reported on strontium-magnesium glazes without lead and boron for faience and majolica which have been developed in the Gosudarstvennyy nauchno-issledovatel'skiy keramicheskiy institut (State Scientific Research Institute of Ceramics); L. S. Yastrebova, and V. S. Molchanov (GOI) discussed the role played by the

Card 2/4

surface protection film in the destruction of silicate glasses; G. I. Veynberg (GOI) discussed the coloring characteristics and the technology of phosphate glasses; O. V. Mazurin (LTI) reported on the mobility of sodium ions in glass types of the system Na_2O-RO-SiO_2; E. A. Nosova (NII Stroykeramika) discussed the process of subduing the glazes by lead oxide and zirconium; L. G. Mel'nichenko, Khar'kovskiy politekhnicheskiy institut (Khar'kov Polytechnic Institute) reported on silicate formation and sintering processes in the briquetted glass layer; K. M. Yeratrosyan investigated various types of glass; N. N. Semenov (Glass Institute) reported on the determination of impurities in silica by spectroscopic analysis; S. B. Bogdanova, and Ye. M. Orlova (Glass Institute) reported on types of electrode glass which has been devised by them. Ye. V. Rogoshin (Glass Institute) discussed the kinetics of the formation of crystallization centers in photo-sensitive types of glass ; Z. M. Syritskaya (Glass Institute) discussed the results of the investigation of the tendency of phosphatic systems towards glass formation; L. A. Grechanik, N. V. Petrovykh, and V. G. Karpechenko (NIIES) reported on the investigation of types of semiconducting oxide glass on the basis of V_2O_5 ; N. V. Solomin, L. A. Grechanik, I. V. Shpakova, and Ye. A. Faynberg (NIIES) discussed the production of conductive films on types of glass which contain components easily to be regenerated.

SOV/62-59-1-1/38

5(2)
AUTHORS: Molchanov, V. S., Prikhid'ko, N. Ye.

TITLE: Corrosion of Silicate Glasses by   Alkali Solutions
                (Korroziya silikatnykh stekol shchelochnymi rastvorami)
                Communication V. Effect of Alkali Concentration on the
                Degree of Glass Destruction (Soobshcheniye 5. Vliyaniye
                kontsentratsii shchelochi na stepen' razrusheniya stekla)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
                1959, Nr 1, pp 3 - 8 (USSR)

ABSTRACT: In the present paper the authors investigated the corrosion
                of various glasses within a wide range of the concentrations
                of alkali solutions in order to determine accurately the
                influence exercised by the composition of glass on the
                kind of dependence of the corrosion on the alkali concentra-
                tion. The degree of glass destruction by alkali was determined
                by measuring the thickness of the dissolved glass layers
                according to the interferometric method earlier described
                (Ref 5). The results of measurement are given in table 1
                and Figs 1,2,and 3 . It results from these investigations
                that an increase of the aqueous caustic soda concentration

Card 1/4

Corrosion of Silicate Glasses by   Alkali   SOV/62-59-1-1/38
Solutions. Communication V. Effect of Alkali Concentration on the Degree
of Glass Destruction

within the range 0.5 - 10 N exercises a different influence
on the degree of destruction of silicate glasses: the
corrosion of glasses rich in silica is proportional to the
alkali concentration; at the beginning, the destruction of
glasses rich in lead, zinc, cadmium and magnesium increases,
but later on it is decelerated due to an accumulation of
anion inhibitors in the solution and the formation of protec-
tive layers of magnesium hydroxide; glasses with high calcium,
strontium or barium contents are destroyed to the same depth
by all solutions within the range of the concentrations in-
vestigated. Concentrations of alkali earth hydroxide solutions
exert quite a different effect. It results from the thick-
ness of the dissolved layers of 9 glasses (Table 2), which
were obtained in 0.02 and 0.5 N solutions of strontium and
barium hydroxide, that 0.5 N solutions exercise not as
destructive an effect as 0.02 N solutions. This is in contrast
with aqueous soda lyes which upon an increase of their con-
centration destroy all glasses all the more. This specific
property of the hydroxide solutions of alkali earth metals

Card 2/4

.Corrosion of Silicate Glasses by   Alkali   SOV/62-59-1-1/38
Solutions. Communication V. Effect of Alkali Concentration on the Degree
of Glass Destruction

presumably may be explained by the formation of alkali-
resistant solutions on the glass surface. Such a cation
inhibition was already described (Ref 10). This was clearly
confirmed by the investigation of the corrosion of glass-
like sodium silicate in a 0.02 N strontium or barium hydro-
xide solution. On the glass surface the formation of white
crystalline precipitations was observed, which by X-ray
phase analysis were identified as barium and strontium
orthosilicates. This assumption was confirmed by comparing
the interplanar spacings of the precipitations observed to
those of the corresponding orthosilicates (Table 3). There
are 3 figures, 3 tables, and 11 references, 6 of which
are Soviet.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute
of Silicate Chemistry of the Academy of Sciences, USSR)

Card 3/4

5 (2)

AUTHORS: Molchanov, V. S., Prikhidko, N. Ye.   SOV/62-59-6-4/36

TITLE: Corrosion of Silicate Glasses by Alkaline Solvents (Korroziya
             silikatnykh stekol shchelochnymi rastvorami). Communication 6,
             The Phenomenon of "Sodium Carbonate Paradoxa" (Soobshcheniye 6.
    Yavleniye "Sodovykh paradoksov")

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
             1959, Nr 6, pp 975-980 (USSR)

ABSTRACT: By way of introduction the definitions by Grebenshchikov's
             school of the paradoxon mentioned in the title (paradoxon of the
             first and second type) are dealt with in brief according to
             different publications (Refs 1-12). The present paper reports on
             some experimental results concerning the action of sodium hydroxide
             and its salts on glasses. The intensity of this action of
             different solutions was interferometrically measured by the
             thickness of the glass layer dissolved. Half-normal solutions
             were used at a temperature of 90° and an action upon glass of 4
             hours. At first the action of solutions on 41 glasses of different
             composition (2,3,4-component glasses) was investigated and the
             sodiumparadoxon (action of sodium carbonate is stronger than the
Card 1/2   action of sodium hydroxide) of the first and second type, and of

Corrosion of Silicate Glasses by Alkaline Solvents.   SOV/62-59-6-4/36
Communication 6, the Phenomenon of "Sodium Carbonate Paradoxe")

both types was determined with different glasses (Table 1). The
paradoxa are connected with the absolute alkaline resistance of
the glasses. They were found to be especially marked with hardly
resistant glasses. It was furthermore observed that glasses
containing Ca, Sr, Ba, and Pb increase the paradoxon, whereas
it does not occur with Zn and Cd. Thus there is a specific
action of the carbonate ion upon glasses, which destroys the
silicate-oxygen group and by itself forms silicon acid compounds.
Corrosion by the carbonate on the surface of the glass only
occurs in case of a difficultly soluble salt. Orthophosphate
ions also exhibit strong capacity of corroding the glasses.
They split up the silicon-oxygen bonds and then they form
difficultly soluble compounds with the cations. There are 3
tables and 16 references, 8 of which are Soviet.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of
Chemistry of Silicates of the Academy of Sciences, USSR)

SUBMITTED: August 30, 1957
Card 2/2

S/153/60/003/006/007/009
B103/B206

AUTHORS: Makarova, T. M., Mazurin, O. V., Molchanov, V. S.

TITLE: Electrical conductivity and chemical stability of silica glass
               containing two alkali metals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
               khimicheskaya tekhnologiya, v. 3, no. 6, 1960, 1072-1078

TEXT: The authors studied the phenomena which are the mutual basis for the
processes of electrical conductivity and chemical destruction of glass. As
is known (Refs. 2,3), the electrical conductivity as well as dielectric
losses can be reduced by replacing one alkali metal in the glass by another
one. This phenomenon was named "neutralization effect" by G. I. Skanavi
(Ref. 4). The authors do not consider this special term to be suitable and
propose the designation "Two-alkali effect". This effect permits the im-
provement of the glass insulation properties without notably changing the
other properties. Table 1 contains data on the composition of the glass
types studied in % by mole. The chemical stability of the glass was deter-
mined by its behavior against water by the titration method. The destruc-

Card 1/6

Electrical conductivity and...

tion of the glass (powder 70-50μ) was determined through titration of the water extract with 0.01 N HCL (indicator methyl red). Table 2 shows the resistivity, specific gravity and resistivity (ρ) of the glass types. From these results the authors draw the following conclusions: 1) The increase of the resistance of glass types which is caused by replacing one alkali oxide by another one (two-alkali effect), changes only slightly with regard to value and position of the maximum, if oxides of bivalent metals are introduced instead of silica. The resistance is thereby increased by several orders of magnitude. The maximum is reached at a ratio $Na_2O : K_2O$

= 4:5. 2) With a gradual replacement of N_2O by K_2O, the chemical resistivity of glass types against boiling water passes a maximum which lies at $N_2O : K_2O = 5:1$. For the glass types investigated the resistivity increase lies between 74 and 15%, as compared with the resistivity of the best one-alkali glass. The nature of a bivalent metal admixed to a two-alkali glass influences the value of the maximum, but not its position.   3) The aforementioned differences prove that the change of the electrical conductivity on the one hand and the chemical resistivity on the other hand,

Card 2/6

Electrical conductivity and...

represent two fundamentally different phenomena under the influence of the two-alkali metals contained in the glass. The authors state that the increase of resistivity is probably determined by the "multi-component effect". It will obviously take place on the first addition of any new component to an initial glass of arbitrary composition. The authors thank G. V. Bogoyavlenskaya for the analyses made. Papers by O. V. Mazurin and Ye. S. Borisovskiy, by G. A. Pavlova, O. V. Mazurin and Petrovskiy, as well as O. V. Mazurin and R. V. Brailovskaya are mentioned. There are 3 figures, 2 tables, and 10 references: 8 Soviet-bloc.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut im. Lensoveta; Kafedra tekhnologii stekla (Leningrad Institute of Technology imeni Lensovet; Department of Glass Technology). Gosudarstvennyy opticheskiy institut (State Optical Institute)

SUBMITTED: April 2, 1959

Card 3/6

Electrical conductivity and...

S/153/60/003/006/007/009
B103/B206

Legend to Table 1:
1) Index of the series;
2) mole %

Индекс серии	2. Состав, мол %						
	SiO_2	R_2O	MgO	CaO	BaO	ZnO	PbO
a	87	13	—	—	—	—	—
b	84	16	—	—	—	—	—
M	70	17	13	—	—	—	—
C	70	17	—	13	—	—	—
B	70	17	—	—	13	—	—
Z	70	17	—	—	—	13	—
P	70	17	—	—	—	—	13
f							

Card 4/6

Legend to Table 2: 1) content of K_2O, %; 2) specific gravity; 3) consumption of 0.01 N HCl, mole; 4) $\lg \rho$ at: 5) series.

% K_2O в стекле 1	Удельный вес 2	Расход 0,01 N HCl, 3 мл	$\lg \rho$ при 150°	300°	% K_2O в стекле 1	Удельный вес 2	Расход 0,01N HCl, 3 мл	$\lg \rho$ при 150°	300°
Серия *a* ($R_2O = 13$, $RO = 0$)					Серия C ($R_2O = 17$, CaO = 13)				
0	2,33	300	6,97	4,81	0	2,53	29	8,15	5,53
2	2,32	182	8,42	5,65	2	2,54	25	9,23	6,23
4	2,32	130	9,45	6,39	4	2,52	23	9,87	6,79
6	2,33	160	9,95	6,82	6	2,53	26	10,60	7,21
8	2,33	252	9,59	6,87	8,5	2,50	27	11,39	7,86
10	2,33	296	9,77	6,08	12	2,52	38	10,59	7,15
13	2,33	340	8,61	6,01	17	2,48	57	9,33	6,51
Серия *b* ($R_2O = 16$, $RO = 0$)					Серия B ($R_2O = 17$, BaO = 13)				
0	2,35	465	6,58	4,51	0	2,94	73	8,89	6,09
2	2,35	423	—	—	2	2,94	46	9,96	6,74
4	2,35	323	8,81	5,87	4	2,89	54	10,77	7,25

Card 5/6

Electrical conductivity and...

S/153/60/003/006/007/009
B103/B206

6	2,36	409	9,65	6,50	6	2,91	83	11,47	7,77
8	2,36	448	9,97	6,85	8,5	2,89	95	12,10	8,24
12	2,36	493	9,79	6,60	12	2,81	—	12,07	8,14
16	2,36	470	8,23	5,87	17	2,90	420	10,36	7,01

Серия M (R$_2$O = 17, MgO = 13)   Серия Z (R$_2$O = 17, ZnO = 13)

0	2,44	32	7,23	4,91	0	2,66	12	7,03	4,87
2	2,44	25	8,09	5,43	2	2,65	11	8,05	5,45
4	2,43	23	8,76	5,86	4	2,64	10	8,75	5,97
6	2,44	27	9,41	6,42	6	2,66	12	9,29	6,29
8,5	2,44	29	10,29	7,02	8,5	2,64	13	10,00	6,75
12	2,43	39	—	—	12	2,65	—	10,05	7,00
14	2,43	—	9,67	6,68	14	2,63	—	9,55	6,61
17	2,41	71	8,09	5,72	17	2,55	18	8,15	5,75

Серия P (R$_2$O = 17, PbO = 13)   p.t.o.

0	3,21	35	9,01	6,02	8,5	3,19	23	11,95	8,26
2	3,29	27	10,10	6,71	12	3,24	34	—	—
4	3,22	0	10,82	7,41	14	3,18	118	—	—
6	3,27	14	11,48	7,83	17	3,19	130	10,07	7,45

Card 6/6

YEVSTROP'YEV, K.K.; MAZURIN, O.V.; MOLCHANOV, V.S.

Relation between certain physicochemical properties of glasses
and their composition. Zhur.VKHO 6 no.1:114-116 '61. (MIRA 14:3)
(Glass)

25640

S/032/61/027/007/012/012
B110/B203

IF-2670

AUTHORS: Korolev, N. V., and Molchanov, V. S.

TITLE: New interference apparatus for measuring the alkaliproofness
              of glasses

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 7, 1961, 913-916

TEXT: To study the alkali corrosion of silicate glasses by the interference
method, one part of the previously polished sample is protected by a rubber
coat, the other one is exposed to the reagent. The height of the step
formed at the boundary of the two parts, representing a measure for the
alkaliproofness, is determined by measuring the interference band shift with
the microinterferometers ММИ-4 (MII-4), ММИ-5 (MII-5), and И3К-46 (IZK-46),
if the transition zone is $\leqslant 0.1$ mm. Often, alkali penetrates below the
rubber, or forms a wide "ditch" by "linear adsorption". Besides, the MII-4
apparatus gives only a slight contrast of the interference pattern due to
the great difference in the reflection coefficients of glass and aluminum-
coated mirror. These shortcomings are eliminated by the double-interference
polarization microscope (Fig. 1) developed for polarization measurements of

Card 1/6

25640

S/032/61/027/007/012/012
B110/B203

New interference apparatus for ...

micrograins according to P. Drude (Ref. 6: Optika, ONTI (1935)). It is
designed on the basis of V. P. Linnik's double microscope. The horizontal
working slit 1 of the microscope is illuminated by an CBA-120 (SVD-120)
mercury vapor lamp 2 via collector 3, light filter 4, and polaroid polarizer
5. By means of collimator objective 6 and microobjective 7 (f = 25.02;
A = 0.13), the slit is projected on the upper side of the sample 8 with the
test glass 9, 0.6-0.8 mm thick, placed upon it. Between 6 and 7, there is
the diaphragm 10, oriented perpendicularly to slit 1, for the incidence
plane of the rays on the sample surface. 5 is adjusted so that the
polarization plane of the emitted light forms an angle of 45° with the
plane passing through the optical axis of the illuminating and observation
microscopes. In the observation microscope, a few images of the slit may
be seen after applying the test glass 9, due to light reflection from the
sample surface and the surface of the test glass. For the interference
measurement are also used: the rotating polaroid analyzer 11, the flap 12,
and the sliding cylindrical lens 13. The image of the rear focal plane of
microobjective 14 is projected on the network of the eyepiece micrometer 15
by means of rays lying in the drawing plane, the image of the sample
surface is projected by means of rays lying in the perpendicular plane. In

Card 2/6

25640

S/032/61/027/007/012/012
B110/B203

,New interference apparatus for ...

the illuminated rectangle visible in the eyepiece, the vertical coordinate corresponds to a certain angle of incidence on the surface, the horizontal coordinate to a certain surface point. 12 lies in the plane where the cylindrical lens forms the image of slit 1 with rays lying in the drawing plane. 12 is to remove the light reflection from the test glass surface. 13 is introduced after adjusting the slit images, projected on the upper side of the sample and on the lower side of the test glass, into the center of the visual field of the eyepiece micrometer. Interference bands are formed by the interference of light beams reflected from the lower side of the test glass and the sample surface. If the two surfaces are parallel, straight, horizontal lines are formed whose number depends on the surface clearance: $K = (2h/\lambda)(\cos\psi_{min} - \cos\psi_{max})$, where K = number of bands, h = clearance between 8 and 9, λ = wavelength (with Hg lamp and ПС-7 (PS-7) light filter: $\lambda = 0.546 \mu$), ψ_{min} and ψ_{max} = minimum and maximum angle of incidence on the sample surface. In the case of 7 with opening $A = 0.13$, $\psi_{min} = 37°30'$, $\psi_{max} = 52°30'$. In the transition zone, h changes, the interference bands bend, and their number in the illuminated rectangle

Card 3/6

25640

New interference apparatus for ...

S/032/61/027/007/012/012
B110/B203

changes. If the step has a smooth boundary, if the course of a band can be pursued, and if the integral and fractional number of bands in the curvature can be accurately measured, the following holds for the step height: $h = (\Delta K \cdot \lambda)/1.41 = 0.38\Delta K$, ($\mu$). If the transition zone is not smooth, the total number of bands is measured in the rectangle on the left and right of the boundary. In this case, $h = 1.48 \cdot \Delta n$, μ, where $\Delta n =$ difference of the band numbers left and right of the boundary in the rectangle. Test glasses $(87-X)\%$ $SiO_2 \cdot X\%$ $RO \cdot 13\%$ Na_2O as well as quartz test glasses were treated with

0.5 N NaOH at $90°C$ for 4 hr. The values obtained with the new apparatus and by N. Ye. Prikhod'ko with an МИИ-1 (MII-1) interference microscope are in good agreement. The advantage of the new apparatus is its applicability also with strongly blurred boundaries, as well as the more distinct contrast of its interference pattern. It is suited for determining steps of 0.02-10 μ as compared with 0.03-1 μ with MII-1. It is also used for measuring the thickness of films, formed by acid or salt solutions. There are 2 figures, 1 table, and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The two references to English-language publications read as follows: Ref. 1: J. Franklin Inst., 220, 498 (1935); Ref. 2: R. Pike, D. Hubbard. J. Research. Nat. Bur. Stand., 50, 87 (1953).

Card 4/6

MOLCHANOV, V.S.; MAKAROVA, T.M.

Effect of oxides of polyvalent elements on the alkali-resistance
of glasses. Zhur. prikl. khim. 34 no.1:100-107 Ja '61.
(MIRA 14:1)

(Glass—Corrosion)   (Oxides)

ACCESSION NR: AP4032503   S/0080/64/037/004/0886/0887

AUTHOR: Molchanov, V. S.; Makarova, T. M.

TITLE: The effect of lanthanum and zirconium on the alkali resistance of silicate glasses.

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 4, 1964, 886-887

TOPIC TAGS: silicate glass, alkali resistance, solubility, lanthanum containing silicate glass, zirconium containing silicate glass, lanthanum, zirconium

ABSTRACT: Since prior work (ZhPKh, XXXIV, 1, 100 (1961)) indicated that the addition of 5 mol% lanthanum oxide insolubilized alkali silicate glasses with respect to 0.5N NaOH, this study was conducted to determine how far these improved properties extended. Comparisons were made of the solubilities in various concentrations of NaOH and mixtures of NaOH and Na_2CO_3 of glasses containing 5 mol% ZrO_2 or La_2O_3 and 21% ZrO_2 or La_2O_3. Lanthanum imparts high alkali resistance, exceeding that of zirconium, to silicate glasses only when basicity is below that of 2N NaOH. In concentrated caustic, carbonate and caustic-carbonate solutions containing a higher proportion of carbonate, the lanthanum oxide glasses disintegrate

Card 1/2

ACCESSION NR: AP4032503

several times more rapidly than in dilute caustic. In this respect they are inferior to the zirconium-containing glasses. Orig. art. has: 1 table.

ASSOCIATION: None

SUBMITTED: 11May63   ENCL: 00

SUB CODE: MT, SS   NO REF SOV: 005   OTHER: 000

Card   2/2

PORAY-KOSHITS, Ye.A., otv. red.; YEVSTROP'YEV, K.S., red.;
    KONDRAT'YEV, Yu.N., red.; LEBEDEV, A.A., red.; MAZURIN,
    O.V., red.; MOLCHANOV, V.S., red.; PETROVSKIY, G.T.,
    red.; POZUBENKOV, A.F., red.; TOROFOV, N.A., red.;
    CHEBOTAREVA,T.Ye., red.; YAKHKIND, A.K., red.

    [Vitreous state; transactions] Stekloobraznoe sostoianie;
    trudy. Moskva, Nauka, 1965. 439 p.   (MIRA 18:7)

    1. Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu.
    4th, Leningrad, 1964.

ZHITKYAVICHYUTE, I.I. [Zitkeviciute, I.]; MOLCHANOV, V.S.; ALEYNIKOV, F.K.

Alkali resistance of some silicate glasses. Part 1: Dependence of alkali resistance on the composition of glasses. Trudy AN Lit. SSR. Ser. B. no.2:137-148 '65.   (MIRA 19:2)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR. Submitted October 6, 1964.

L 60427-65   EWP(e)/EWT(m)/EWP(1)/EWP(b)   Pq-4   GS/JAJ/WH
ACCESSION NR: AT5017271   UR/0000/65/000/000/0146/0150

AUTHOR: Molchanov, V.S.; Myuller, R.L.; Pronkin, A.A.

TITLE: Electrical conductivity of complex potassium-titanium-lead glasses

SOURCE: Leningrad. Universitet. Khimiya tverdogo tela (Chemistry of solids).
Leningrad, Izd-vo Leningr. univ., 1965, 146-150

TOPIC TAGS: glass conductivity, potassium compound, titanium compound, lead com-
pound

ABSTRACT: The electrical conductivity changes were studied at 120-340C in a series of
glasses of the following composition (in mole %): $12K_2O \cdot 12CaO \cdot 12BaO(12-x) \cdot PbO \cdot xTiO_2 \cdot 52SiO_2$, where x was changed in increments of 1. The density, preexponential factor
$\log \sigma_0$, energy of conductivity ϵ_σ, and volume concentrations of Si and K atoms are
tabulated. As TiO_2 was gradually substituted for PbO, the energy ϵ_σ increased (while
there was only a slight change in the resistance of the glasses), reached a maximum
when 3 mole % PbO had been replaced by TiO_2, and then declined. This maximum is
attributed to the fact that when the composition of the glass becomes more complex as a
result of the introduction of the new component, the association of the structural aggre-
gates or polar "strands" (in which potassium is concentrated) becomes more difficult,

Card 1/2

L 60427-65
ACCESSION NR: AT5017271

i.e., their dispersion is facilitated. A more extensive or complete replacement of the polar structural units formed by the divalent metal (for example, lead) by less polar units (for example, titanium-containing ones) decreases the energy of conductivity by reducing the dispersion of the polar strands. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: None

SUBMITTED: 02Mar65   ENCL: 00   SUB CODE: MT, EM

NO REF SOV: 008   OTHER: 003

Card   2/2

KAGAN, B.M., doktor tekhn. nauk; DOLKART, V.M., kand. tekhn. nauk; NOVIK, G.Kh.,
kand. tekhn. nauk; STEPANOV, V.N., inzh.; KANEVSKIY, M.M., inzh.;
LUK'YANOV, L.M., inzh.; TANAYEV, M.Ya., inzh.; POLYAKOV, V.N., inzh.;
KOLTYPIN, I.S., inzh.; UL'YANOVA, Ye.K., inzh.; ADAS'KO, V.I., inzh.;
MOLCHANOV, V.V., inzh.; VOITELEV, A.I., inzh.

The "VNIIEM-1" universal control computer. Elektrotekhnika 35 no.7:
4-10 '64.   (MIRA 17:11)

Separation by chemical exchange reactions of the stable isotopes of nitrogen. I. G. M. Panchenkov, L. A. Sevastin, A. A. Nanasov, N. L. Molchanov, and D. P. Kokhadny (M. V. Lomonosov State Univ., Moscow). Zhur. Fiz. Khim. 31, 1893-9 (1957).—The effect of the nature and the size of the packing in the reaction column on the sepn. of N isotopes, and the effect of NH_3 partial pressure during the reaction $N^{14}H_3$ gas $+ N^{15}H_4NO_3$(soln.) $= N^{15}H_3$ gas $+ N^{14}H_4NO_3$(soln.) was investigated. Coarse grain, medium-pore SiO_2 and Al_2O_3 gels, fire brick and activated coal, either coated with Al_2O_3 or with ZnO, or untreated were used as the packing. Also etched or unetched glass rods, glass rings of the Fenske type, different size triangular prisms, and rings of O- or 18-Cr steel. All

8
1
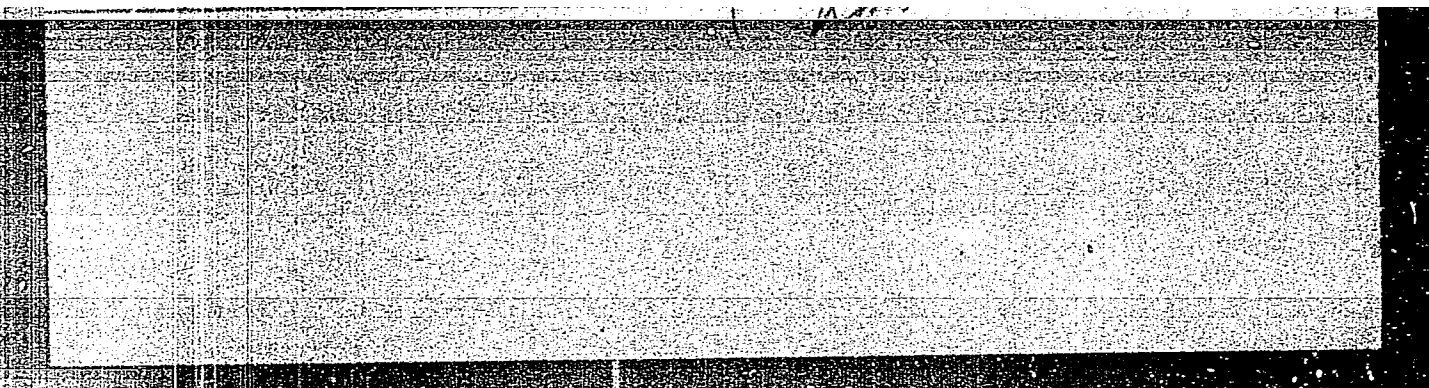
MOLCHANOV, V.V.; NOVIK, G.Kh.; KUZ'MINOV, A.I., red.

[Use of radio techniques in the national economy] Primenenie radiometodov v narodnom khoziaistve. Moskva, Energiia, 1964. 79 p. (Massovaia radiobiblioteka, no.551)   (MIRA 17:12)

L 59520-65   EWT(d)/T/EWP(1)/EED-2   Pq-4/Pg-4/Pk-4   IJP(c)   BB/GG
ACCESSION NR: AP5015535   UR/0286/65/000/008/0069/0070
                                                        681.142.32

AUTHOR: Kagan, B. M.; Dolkart, V. M.; Novik, G. Kh.; Kanevskiy, K. M.; Luk'yanova,
L. M.; Stepanov, V. N.; Ul'yanova, N. K.; Koltypin, I. S.; Adas'ko, V. I.; Molchanov,
V. V.; Voitelev, A. I.

TITLE: General-purpose digital control computer. Class 42, No. 170218

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 69-70

TOPIC TAGS: control computer, arithmetic unit, adder,
amplifier, analog digital converter, digital

ABSTRACT: An Author Certificate has been issued for a digital control computer con-
sisting of an arithmetic unit, magnetic core memory unit, control unit, input/out-
put unit, magnetic tape memory, teletype, perforator, universal converter, and oper-
ator console. The system is economical, fast-acting, and reliable, due to a number
of distinct features incorporated into its design. Economy is achieved by a special
arrangement of the adder and the memory unit with its output parity check control.
Speed is increased by an asynchronous mode of operation, and a special design of the
adder, in which the time necessary for information distribution is kept to a mini-

Card 1/2

L 59520-65
ACCESSION NR: AP5015535

mum. High overall reliability is achieved by a temperature-stabilized, high-speed,
disturbance-immune memory unit design. Other reliability features include the ab-
sence of interference between the B-register contents and its counter, a longitudinal
parity check for the punch tape, an automatic tape misalignment guard, and automatic
drift compensation in the multichannel A/D and D/A converters.
[BD]

ASSOCIATION: Vsesoyuznyy Ordena trudovogo krasnogo znameni/ nauchno-issledovatel'skiy
institut electromekhaniki (All-Union Scientific Research Institute of Electrome-
chanics)

SUBMITTED: 06Mar64   ENCL: 00   SUB CODE: DP

NO REF SOV: 000   OTHER: 000   ATD PRESS: 4053

Card 2/2

MOLCHANOV, E. I.

AID P - 2571

Subject   : USSR/Engineering

Card 1/1   Pub. 110-a - 10/16

Author   : Molchanov, E. I., Eng.

Title   : On the problem of thermal stresses in discs

Periodical   : Teploenergetika, 8, 46-48, Ag 1955

Abstract   : A theoretical analysis of thermal stresses in a very
                thin disc. The experimental installation for the
                measuring of thermal stresses is described. The method
                and results of measuring are presented. Four diagrams.
                Six Russian references, 1937-1952.

Institution : All-Union Heat Engineering Institute

Submitted   : No date

Sum.- 519851

MOLCHANOV, YE. I.

176/13/1   621.438-253 :536.212
Analysis of the Temperature Field   Teploenergetika, 3
in a Gas-Turbine Rotor using a   (1),53-57
Hydraulic Integrator   Jan., 1956
    E. I. Molchanov   U.S.S.R.

An integrator devised by V.S. Lukyanov consists of a network
of vessels of adjustable capacity and pipes of adjustable
resistance to flow. Its application is first demonstrated
by comparing the heat flow in a bar of square cross-section
with the analogous hydraulic process. The analysis of more
complicated problems is illustrated by that of a five-stage
drum-type turbine rotor, of austenitic steel, where the
resistances to heat flow of the various component sections
are estimated and converted to the equivalent hydraulic
systems. From this temperature isothermals are plotted
and quantitative and qualitative data on the heat process
deduced.
(From Engrs' Dig. 17(11),469-471,474, Nov.,1956,U.K.)

All-Union Heat Engineering Inst.

Summary 51951